

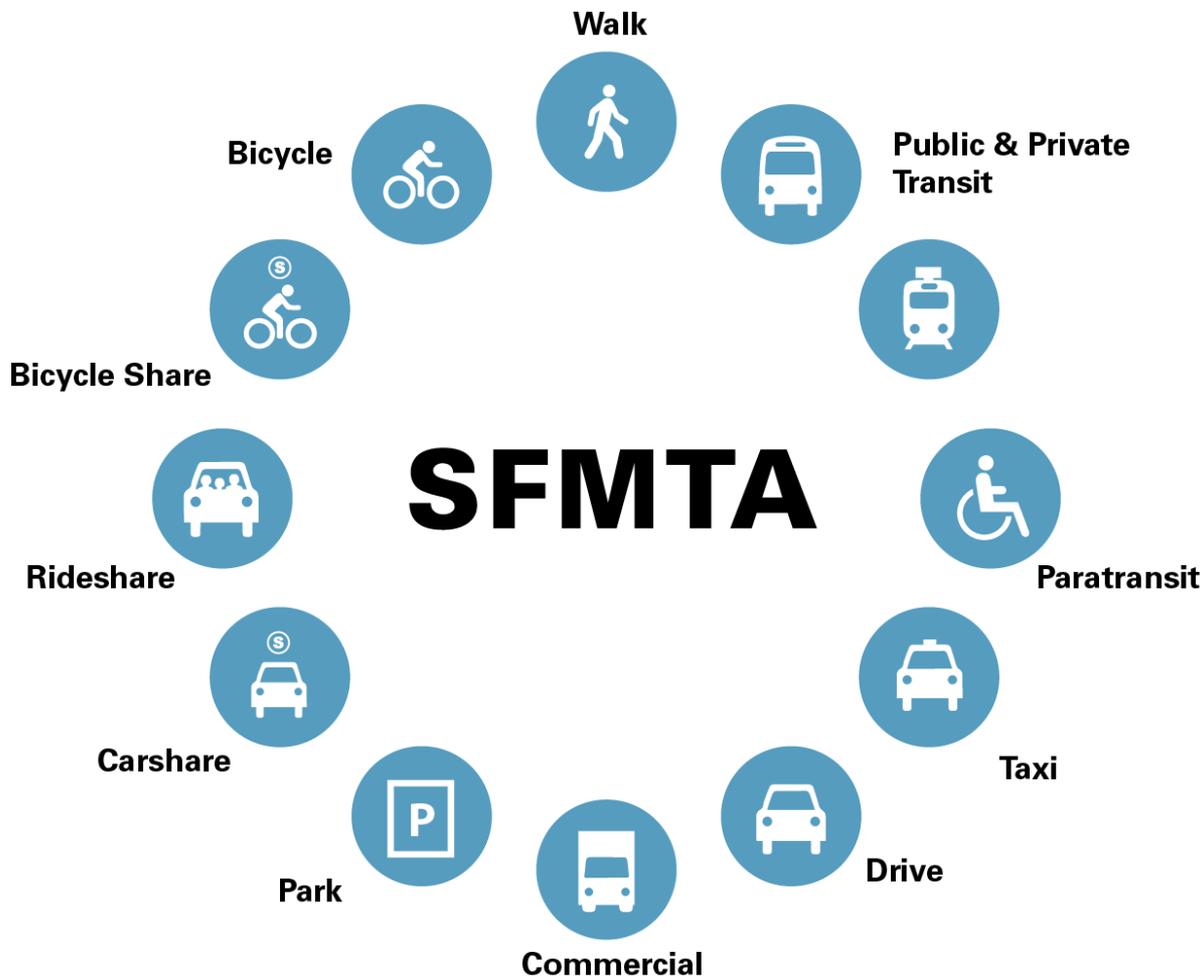
Capital Asset Management Program: Asset Breakdown Structure and Condition Assessment

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Multi-modal Transportation Agency



SFMTA Assets

- 1,040 transit vehicles
- 71.5 miles of Light Rail Vehicle & 8.8 miles of Cable Car tracks
- 9 subway stations, with 9 elevators & 28 escalators
- 24 surface light rail stations & numerous boarding platforms
- 19 operations, maintenance & administrative facilities
- 208 miles of bicycle paths, lanes & routes
- 1,184 traffic signals
- 40 off-street parking garages & lots
- 28,862 metered parking spaces
- 1,500 taxis



Asset Management at SFMTA

- Started in 2006
- The regional MPO, the Metropolitan Transportation Commission (MTC), has a history of emphasizing maintenance and repair with Fix it First Policy
- SFMTA worked with MTC to develop asset structure for region
- SFMTA refined asset structure and classes to meet agency needs

Asset Class Definition

- The SFMTA published the State of Good Repair Asset Inventory Report in 2010
- Primary Asset Classes:
 - Motor Coach Vehicles
 - Light Rail Vehicles
 - Trolley Coach Vehicles
 - Track
 - Overhead System
 - Facilities
 - Stations
 - Train Control & Communications
 - Parking and Traffic
 - Other Systems & Vehicles

Asset Attributes

List of Attributes Included in Asset Inventory

Asset ID # and Description	In Service Date
Asset Category	Scheduled Useful Life
Unit Type (i.e. vehicle)	Unit Replacement Cost
Quantity	Location
Mode Type	Rehabilitations per life and cost/unit

SFMTA Asset Inventory – Sample Line Items

Asset ID	Pjt ID	Mode	Qty	Units	Asset	Service Date	Useful Life	Unit Repl. Cost	Location	Category	Element1	MTC RTCI/TERM Data Format				Notes
												Element2	Element3	Rehabs Per Life	Rehab Cost/Unit	
20051	1003	Light Rail	1	Each	Elevators and Conveying Systems-	1977	25	\$2,092.663	2200 San Jose Ave	Facilities	Maintenance		Elevators and Conveying	0	\$0	Maintenance-Curtis E. Green (LRV)
20052	1003	Light Rail	1	Each	HVAC - Equipment-Maintenance-Curtis E.	1977	25	\$5,231.658	2200 San Jose Ave	Facilities	Maintenance		HVAC - Equipment	0	\$0	Maintenance-Curtis E. Green (LRV)
20053	1003	Light Rail	1	Each	HVAC - Controls-Maintenance-Curtis E.	1977	20	\$2,092.663	2200 San Jose Ave	Facilities	Maintenance		HVAC - Controls	0	\$0	Maintenance-Curtis E. Green (LRV)
20054	1003	Light Rail	1	Each	HVAC - Distribution Systems-Maintenance-	1977	50	\$5,231.658	2200 San Jose Ave	Facilities	Maintenance		HVAC - Distribution	0	\$0	Maintenance-Curtis E. Green (LRV)
20055	1003	Light Rail	1	Each	Electrical Equipment-Maintenance-Curtis E.	1977	30	\$5,231.658	2200 San Jose Ave	Facilities	Maintenance		Electrical Equipment	0	\$0	Maintenance-Curtis E. Green (LRV)

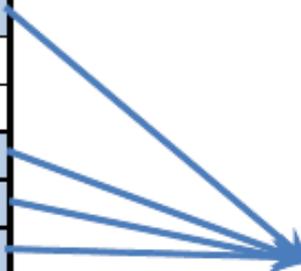
Assets Disaggregated into Major Components

Asset	Percent of Asset Value	Useful Life (years)
<i>Bus Maintenance Facility</i>	100%	--
Substructure	15%	100
Superstructure	18%	100
Roofing	5%	25
Building Exteriors	10%	50
Elevators and Conveying Systems	1%	25
HVAC - Equipment	3%	25
HVAC - Controls	1%	20
HVAC - Distribution Systems	3%	50
Electrical Equipment	3%	30
Electrical Rough-in	7%	70
Plumbing Fixtures	3%	25
Plumbing Rough-in	5%	50
Fire Protection Systems	3%	40
Fire Detection Systems	1%	20
Built-in Equipment and Specialties	12%	25
Interior Finishes	7%	15
Total	100%	

Assets Grouped into Projects

Subcomponents of Green Main Maintenance Building

Substructure- Green Main Maintenance Bldg.
Superstructure- Green Main Maintenance Bldg.
Roofing- Green Main Maintenance Bldg.
Building Exteriors- Green Main Maintenance Bldg.
Elevators and Conveying Systems- Green Main Maintenance Bldg.
HVAC - Equipment- Green Main Maintenance Bldg.
HVAC - Controls- Green Main Maintenance Bldg.
HVAC - Distribution Systems- Green Main Maintenance Bldg.
Electrical Equipment- Green Main Maintenance Bldg.
Electrical Rough-in- Green Main Maintenance Bldg.
Plumbing Fixtures- Green Main Maintenance Bldg.
Plumbing Rough-in- Green Main Maintenance Bldg.
Fire Protection Systems- Green Main Maintenance Bldg.
Fire Detection Systems- Green Main Maintenance Bldg.
Built-in Equipment and Specialties- Green Main Maintenance Bldg.
Interior Finishes- Green Main Maintenance Bldg.

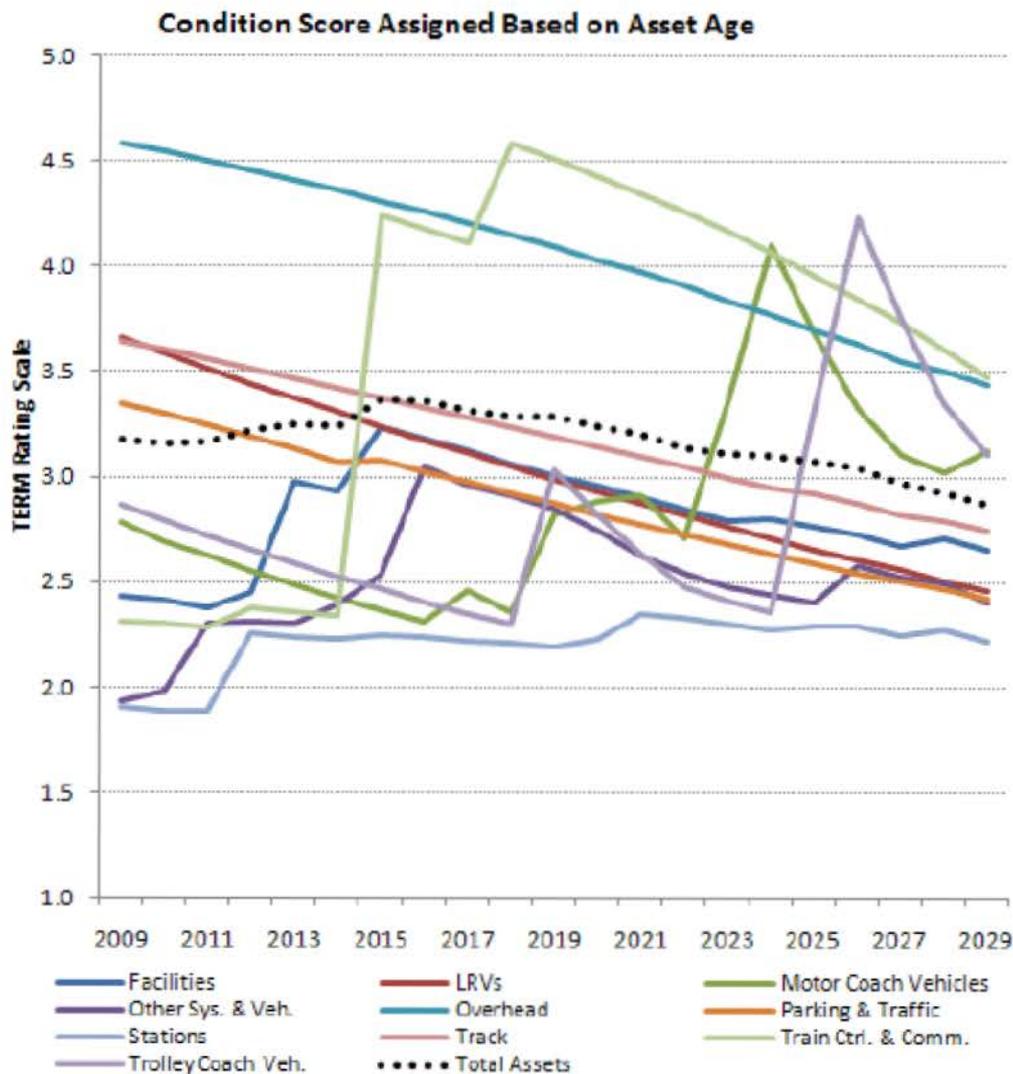


CIP Project
**CPT 519: Green Roof/
 HVAC Rehabilitation**

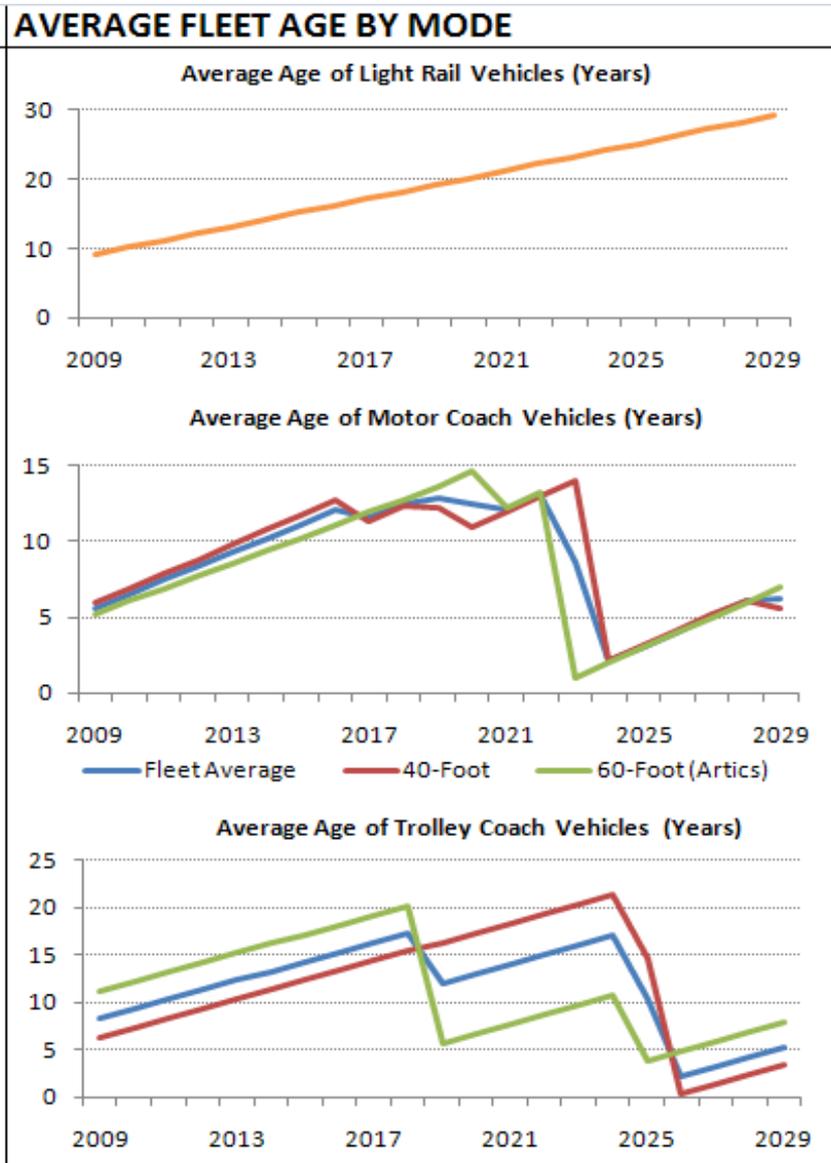
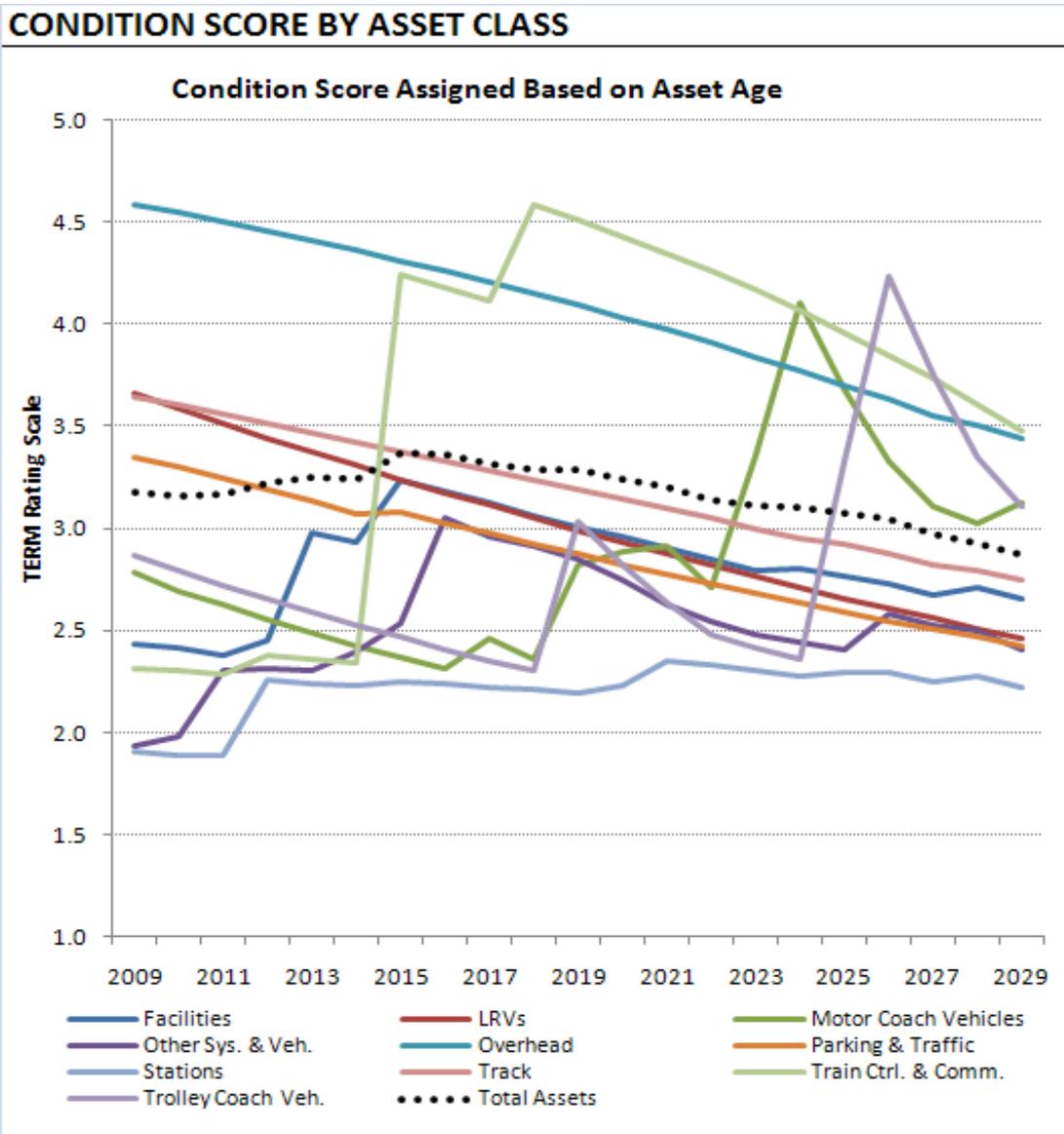
Asset Condition Assessment

- Primary factor used for SGR analysis is age
- FTA condition rating is a function of asset age
- Condition based on inspection data available for some assets (i.e. track maintenance) and used to inform investment decisions; but not for the financial analysis

CONDITION SCORE BY ASSET CLASS



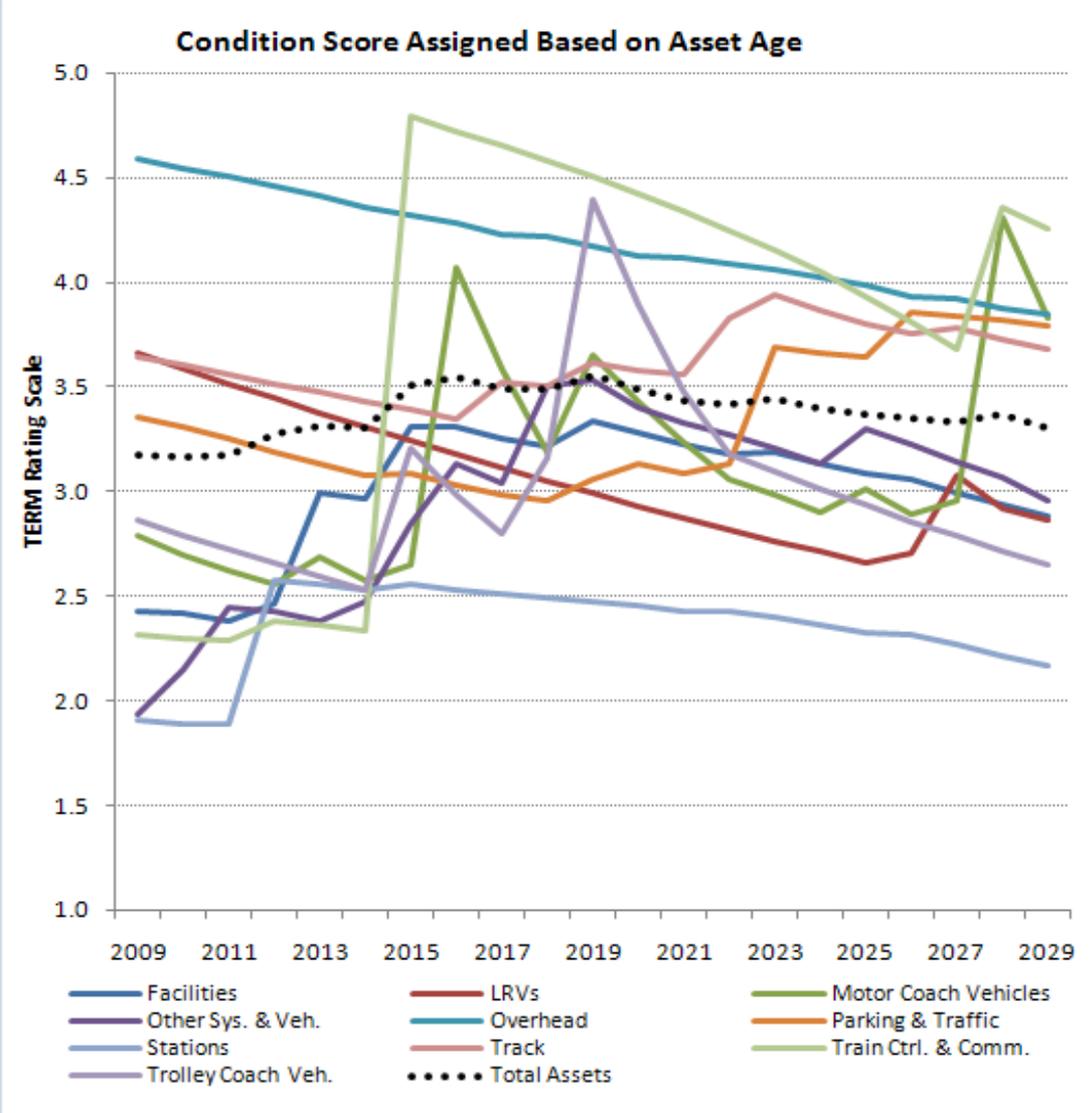
SGR Analysis @ \$163M/Year (Avg) – 100% 2009 Priorities 2009 Financial Plan Level



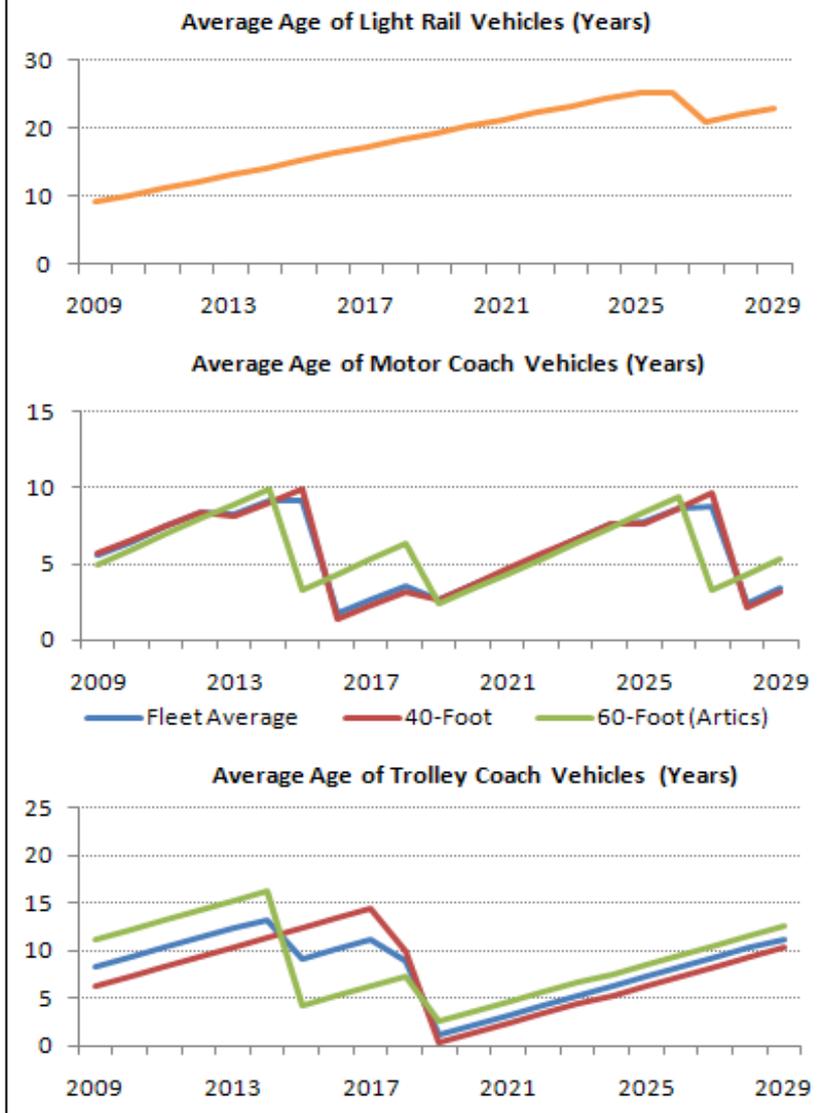
SGR Analysis @ \$366M/Year (Avg) – 100% 2009 Priorities

Maintain Current Backlog

CONDITION SCORE BY ASSET CLASS



AVERAGE FLEET AGE BY MODE



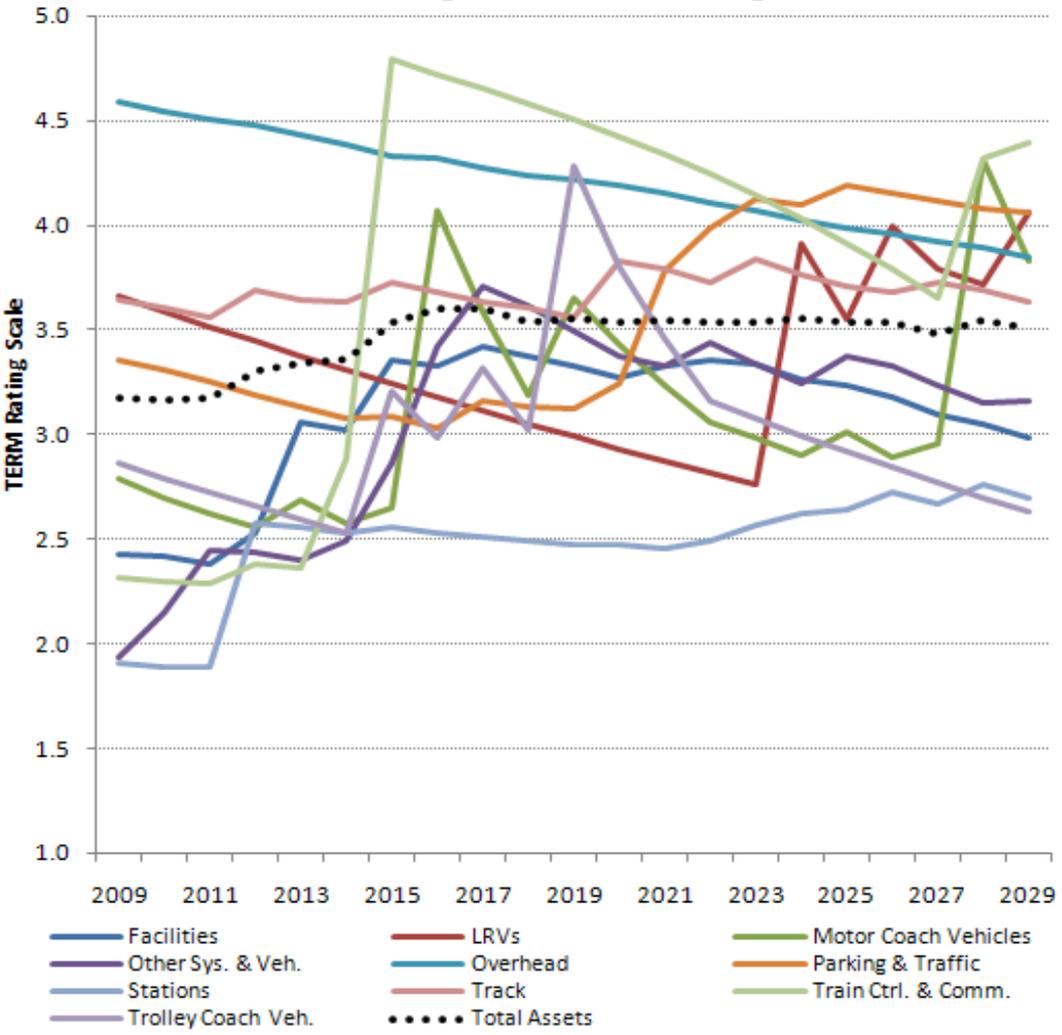
SGR Analysis @ \$432M/Year (Avg) – 100% 2009 Priorities

Reduce Current Backlog by One-Half

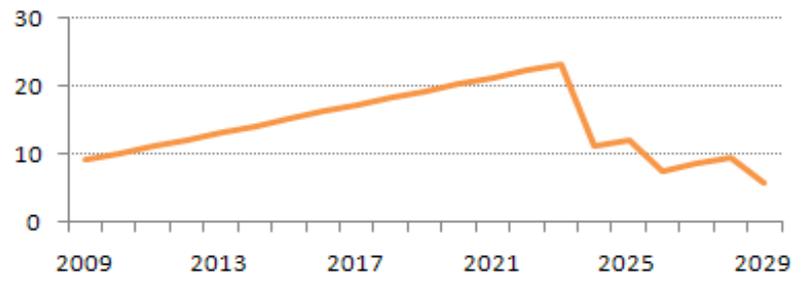
CONDITION SCORE BY ASSET CLASS

AVERAGE FLEET AGE BY MODE

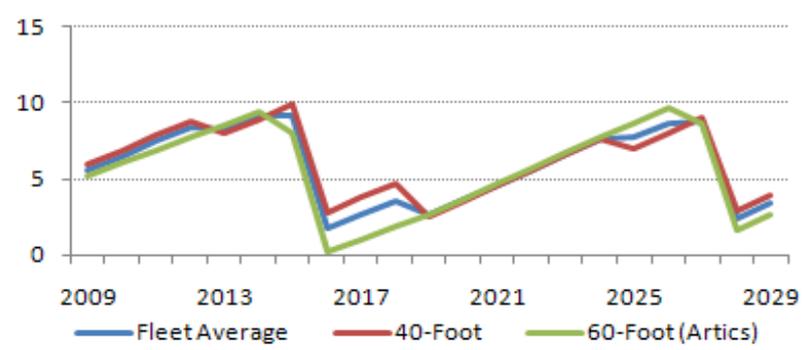
Condition Score Assigned Based on Asset Age



Average Age of Light Rail Vehicles (Years)



Average Age of Motor Coach Vehicles (Years)



Average Age of Trolley Coach Vehicles (Years)



Future Asset Condition Assessment

- Anticipate that different assets will require different condition assessment process:
 - Performance and critical risk
 - Key attribute (key indicator)
 - Efficiency (i.e. energy efficiency of hybrids)
 - Manufacturing Standards and Recommendations (Anticipated, rather than inspection-based)

Asset Condition: Next Steps

- Enterprise Asset Management System based on inspection and other asset condition assessments
- Establish acceptable asset condition thresholds based on performance metrics
- Project conditions and develop short and long-range maintenance and replacement plans

Lessons Learned

- Agree to asset breakdown structure up front
- Agree to standard nomenclature
- Establish update procedures
- Establish asset management goals and metrics

Thank You

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